Program element: # 1 [illegible]
Category: Operational Systems

Title: Defense Support Program
Budget Activity: #3 Strategic Programs

PROGRAM ELEMENT: (1 in thousands)

Project Number	Title	FY 1976 Actual	FY 1976 Actual	FY 1977 Estimate	FY 1978 Estimate	FY 1979 Estimate	Additional to Completion	Total Estimated Cost
	TOTAL FOR PROGRAM ELEMENT	16,431	4,816	28,600	27,600	25,400	Continuing	N/A

BRIEF DESCRIPTION OF ELEMENT: The Defense Support Program (DSP) is the key element of the Worldwide Military Command and Control System (WWMCCS). The system's current deployment consists of satellites and two dedicated ground readout stations.

BASIS FOR FY 1978 BUDGET REQUEST: This request includes funds for evolutionary improvement and development of the satellite system in support of DoD requirements. Another area is testing of the prototype simplified processing station hardware and software. Development of payload modifications for compatibility with shuttle/TITAN III/Interim Upper Stage is initiated.

BASIS FOR INCREASE IN FY 78 OVER FY 77: The increase is attributable to the initiation of shuttle/Titan III/interim upper stage compatibility development.

[redacted]

Program Element: [illegible]F Title: Defense Support Program
Category: Operational Systems Budget Activity: [illegible]

DETAILED BACKGROUND AND DESCRIPTION: The Defense Support Program (DSP)

[illegible] to the National Command Authorities (NCA) and other designated users.

The Joint Chiefs of Staff (JCS) have designated the Aerospace Defense Command (ADCOM), Strategic Air Command (SAC), National Military Command System (NMCS), Atlantic Command (LANTCOM), Pacific Command (PACOM), European Command (EURCOM)
[illegible] as users of DSP data.

Evolutionary system improvements are intended to prolong the useful life of each satellite, make the satellite more survivable
[illegible] increase the viewing area of each satellite, and increase the accuracy of data provided for the NCA decision making process.

RELATED ACTIVITIES:

Defense Satellite Communications System - Phase II (33110F) provides data communications routing. Space Boosters (35110F) provides launch support. Space Vehicle Subsystem Advanced Development (63401F) is developing technology for improved reaction wheels. The National Emergency Airborne Command Post (32015F) and Post-Attack Command and Control System (11312F) are potential users of DSP data. DSP is the key element of the Worldwide Military Command and Control System (WWMCCS)

Program Element: [illegible] Title: [illegible] Program (DSP)
Category: Operational Systems Related Activities: [illegible]

WORK PERFORMED BY: CINCAD maintains operational control of DSP for the Joint Chiefs of Staff. System operation and technical management responsibilities have been delegated to the USAF Aerospace Defense Command (ADCOM). The Air Force Logistics Command (AFLC) provides engineering and logistics support. Air Force Systems Command's Space and Missile Systems Organization (SAMSO), Los Angeles, CA, has overall development and procurement management responsibility. Air Force Weapons Laboratory, Kirtland AFB, NM, will provide facility support. The Air Force Test and Evaluation Center (AFTEC), Kirtland AFB, NM, participates in test and evaluation of selected system segments. TRW, Redondo Beach, CA, is the prime contractor for the spacecraft and satellite integration. Aerojet Electrosystems Company (AESC), Azusa, CA, is the prime contractor for the . Aeronutronic Ford Western Development Laboratories, Palo Alto, CA, is the prime contractor for the User Display and Data Acquisition and Communications segments. The Martin Company, Denver, CO, provides the TITAN IIIC booster. The Energy Research and Development Agency (Sandia Corporation) IBM, Thousand Oaks, CA, is the prime contractor for all software efforts. IBM, Thousand Oaks, CA, and TRW, Redondo Beach, CA, are teamed on the Simplified Processing Station, with IBM as prime. The Aerospace Corporation, Inglewood, CA, furnishes general systems engineering/technical direction to the DSP System Program Office.

PROGRAM ACCOMPLISHMENTS AND FUTURE PROGRAMS:

1. FY 1976/TQ and Prior Accomplishments: Significant accomplishments to date include procurement of 13 satellites and 12 TITAN IIIC boosters, construction of two data processing facilities, and provision of user displays, software, communications and a training facility (also used for software development and mission data analysis), completion of Research and Development (R&D) for modifications to satellites 10-12 to improve survivability and to provide data survivability, completion of R&D for an improved focal plane for satellite 13 and initiation of development of hardware and software for the Simplified Processing Station (SPS).

In FY 76, sensor development was initiated to provide increased viewing area and more accurate data. Development of modifications for satellite retrofit to improve survivability was initiated. R&D support for DSP augmentation was completed.

Program Element: # 1[illegible]1F Title: [illegible] Support Program (DSP)
Category: Operational Systems Budget Activity: #3 Strategic Programs

2. FY 1977 Program: Expenditures include intensive development effort for the improved sensor to provide increased viewing area
payload/shuttle compatibility studies; satellite modification development for improved survivability and increased data survivability; continued hardware and software development for the Simplified Processing Station (delivery in Jan 78); completion of ground station modifications
completion of Satellite Tracking Set Training Equipment procurement; and analysis of orbital data.

3. FY 1978 Planned Program: The major part of the FY 78 funds will be applied to sensor development and payload/shuttle/TITAN III/Interim Upper Stage (IUS) compatibility development. Development of the improved sensor will be completed, t

The improved capability will be retrofitted on satellites currently in the storage inventory and will be incorporated on all new satellite procurements. Intensive development of shuttle/payload compatibility modifications is initiated for inclusion on satellite #4, procured in FY 80. Funds to insure TITAN III/IUS compatibility for the satellite retrofit program are included. Improved spacecraft data transmission capability development is initiated to incorporate state-of-the-art technology and increase reliability. Funding for the Simplified Processing Station Initial Operational Test and Evaluation, Operation/Maintenance demonstration and engineering change orders continues through FY 78. Satellite improvement studies and analysis of data gathered from orbital operations will continue.

4. FY 1979 Planned Program: Plans include continued development of payload/shuttle/TIII/IUS modifications; completion of improved spacecraft data transmission capability development; satellite improvement studies; and continued analysis of orbital operations data.

5. Program to Completion: This is a continuing program. RDT&E funding will support continued evolutionary satellite development in support of DOD requirements. Primary emphasis will be directed toward eliminating or minimizing deficiencies discovered during operational employment and development of the capability to use the space shuttle and/or TIII/IUS in lieu of the TITAN IIIC booster.

6. Milestones:

		Date	Estimated Cumulative RDT&E Cost to Reach Milestones ($ in Thousands)
A.			366,200
B.			375,800
C.			382,100
D.	Delivery of Satellite #5	Mar 73	392,000
E.			397,200

Program Element: # 1.[illegible]
Category: Operational Systems

Title: Defense Support Programs (DSP)
Budget Activity: #3 Strategic Programs

F.	Delivery of Satellite #6	Jul 73	405,800
G.			440,000
H.	Delivery of Satellite #8	May 74	455,000
I.	Delivery of Satellite #7	Oct 74	471,300
J.	Delivery of Satellite #9	Mar 75	485,800
K.			511,400
L.			511,400
M.	Satellite 10-12 Retrofit Complete	Nov 77	545,300
N.	Delivery of Prototype Simplified Processing Station	Jan 78	550,000
O.	Delivery of Satellite #13	Mar 78	554,650

7.. RESOURCES: ($ in Thousands)

		FY 1976	FY 1976Q	FY 1977	FY 1978	FY 1979	Additional to Completion	Total Estimated Cost
RDT&E:	Funds	16,441	4,816	24,600	27,600	25,400	Continuing	N/A
	Quantities (N/A)							
Missile Procurement:								
	Funds	39,500	3,800	25,100	96,400	171,900	Continuing	N/A
	Quantities							
	Satellite Retrofit					3		
	Booster				1			
Other Procurement:								
	Funds:*	12,780	7	10,878	2,436	33,990	Continuing	N/A
	Quantities							
	SPS					1	Continuing	N/A
Military Construction Funds						1,000	Continuing	N/A

*Includes initial spares.

Program Element: #12411F
Category: Operational Systems

Title: Defense Support Program (DSP)
Budget Activity: #1 Strategic Programs

Test and Evaluation Data

1. Development Test and Evaluation: The Defense Support Program is an operational system on which Development Test and Evaluation/Initial Operational Test and Evaluation (DT&E/IOT&E) has been completed. Follow-on Operational Test and Evaluation (FOT&E) is the responsibility of the operating command (Aerospace Defense Command). All discrepancies and deficiencies uncovered to date have been resolved or are planned to be resolved jointly by Aerospace Defense Command (ADCOM) and Air Force Systems Command (AFSC). Maintainability and reliability testing of the system were conducted by AFSC during system development and continue to be conducted by the system operator.

2. Operational Test and Evaluation: Current Air Force Test and Evaluation Center (AFTEC) testing activity of the DSP is limited to the combined test program (DT&E/OT&E) of the Simplified Processing Station (SPS). The combined test program of the prototype SPS is scheduled to begin in October 1977 and be completed by May 1978. The tests will be conducted at IBM, the prime contractor; TRW, the integrating contractor; AF Weapons Laboratory at Kirtland AFB, NM; and at Vandenberg AFB, CA. Testing of the prototype at Vandenberg AFB will include 90 days of actual (not simulated) operations. An AFTEC test team composed of personnel from AFTEC, ADCOM, Air Force Logistics Command (AFLC), Air Training Command (ATC), Strategic Air Command (SAC), Air Force Communications Service (AFCS), USAF Security Service (USAFSS), [redacted] will conduct the IOT&E portion of the test. The purpose of the IOT&E is to provide data and associated analysis of the operational effectiveness, suitability, and military utility of the SPS prototype to assist in a production decision, anticipated for mid to late FY 1978, and to recommend desired changes in any follow-on production SPS models.

3. System Characteristics: The DSP Simplified Processing Station (SPS) operational prototype contract has been awarded to a contractor team comprised of IBM and TRW. The SPS will be a miniaturized, transportable, minimally manned, lower cost version of the current large, fixed, dedicated DSP ground stations. It is intended to act as a backup to current ground stations, [redacted] Technical characteristics will be defined during the period of the contract. No demonstrated performance characteristics are yet available.